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NOTICE OF ALLOWANCE AND FEE(S) DUE

51576

7590

07/27/2009

EMC CORPORATION
c/o DALY, CROWLEY, MOFFORD & DURKEE, LLP
354ATURNPIKE STREET
SUITE 301A
CANTON, MA 02021-2714

EXAMINER

DUONG, THOMAS

ART UNIT

PAPER NUMBER

2445

DATE MAILED: 07/27/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,422	06/28/2001	Michael H. Wright	EMC-038PUS	6882

TITLE OF INVENTION: SYSTEM AND METHOD FOR MANAGING REPLICATION SETS OF DATA DISTRIBUTED OVER ONE OR MORE
COMPUTER SYSTEMS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	10/27/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

**Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE-FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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nonprovisional	NO	\$1510	\$300	\$0	\$1810	10/27/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
DUONG, THOMAS	2445	709-225000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/147; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.

☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 397 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 397 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability**Application No.**

09/894,422

Applicant(s)

WRIGHT ET AL.

Examiner

Thomas Duong

Art Unit

2445

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERIT IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to July 8, 2009.
2. ☒ The allowed claim(s) is/are 28-31, 33-48 and 50-68.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date 7/8/09
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/NIVEK SRIVASTAVA/
Supervisory Patent Examiner, Art Unit 2445

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on July 8, 2009 was filed after the mailing date of the Notice Of Allowability on June 29, 2009. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Allowable Subject Matter

2. *Claims 28-31, 33-48 and 50-68 are allowed. The claims indicated include limitations that the prior arts of record do not appear to teach or render obvious, hence they are allowed.*
3. The following is an examiner's statement of reasons for allowance:
As presented in the previous Office Action, Kleiman et al. (US006574591B1) discloses, *"The 'generate image stream' procedure 203 may also generate one or more block-lists that specify where storage blocks from the source file system are included in the image stream. The block-lists can indicate which storage blocks include one or more block number (BN) pointers. The data read from the source file system includes one or more block number (BN) pointers. The 'generate image stream' procedure 203 can also include a second block-list that can be used to map blocks in the image stream to a second storage block arrangement for the destination file system"* (Kleiman '591, col.5, lines 6-15). Hence, Kleiman teaches of block-lists (i.e., Applicants' map) indicating

which storage blocks from the source file system (i.e., Applicants' physical devices on the first computer) are associated with the one or more block number (BN) pointers (i.e., Applicants' logical information).

Also presented in the previous Office Action, Kleiman et al. (US006604118B2) discloses, *"Select a storage image 220, in response to a first file system (or a snapshot thereof) to have an operation performed thereon. Form an image stream 230 in response to the storage image 220. Perform an operation on the image stream 230, such as backup or restore within the first file system, or copying or transfer to a second file system"* (Kleiman '118, col.14, lines 10-18). Hence, Kleiman teaches of selecting a storage image (i.e., Applicants' first volume group) of the first file system (i.e., Applicants' first file system) and copying or transferring (i.e., Applicants' creating) to a second file system (i.e., Applicants' second operating system) on a second file server.

Also presented in the previous Office Action, Barton et al. (US006023584) discloses, *"FIG. 2 is a flow chart illustrating the general flow performed for the installation and execution of a computer program according to the principles of the present invention. Block 26 represents the computer booting an operating system from a first data storage device. Block 28 represents the computer mounting a first data storage device as one half of a mirrored volume. Block 30 represents the computer mounting a second data storage device as the other half of the mirrored volume. Block 32 represents the computer synchronizing the mirrored volume by copying data from the first data storage device to the second data storage device. At some time during this process, but before synchronization is complete, the mirrored volume can be accessed by users, as indicated by Block 34, which represents a computer program being executed from the mirrored volume. Block 36 represents the computer dismounting or removing the first*

data storage from the mirrored volume, after synchronization has been completed"

(Barton, col.4, lines 23-40). Hence, Barton teaches of synchronizing the mirrored volume (implying that the logical information between the two volumes are identical) by copying data from the first data storage device (i.e., Applicants' first volume group) to the second data storage device (i.e., Applicants' second volume group).

However, the prior arts of record fail to teach or suggest individually or in combination as stated in the independent claims for *"creating a map of the logical information to physical devices on the first computer system, the map defining a first logical configuration comprising: information identifying one or more devices associated with one or more physical volumes containing the data, including device serial number, physical address of the device, volume group, logical volume name, file type, and mount point; and"* and *"using the map to create a second volume-group on a second computer system where the logical configuration of the second volume group is identical to the first logical configuration of the first volume group, including identical volume layout and file system structure as defined by mapping information originally built on the first computer system;"* and in combination with other limitations as set forth in the independent claims, as well as Applicants' arguments presented on pages 16-26 of the After Non-Final Amendment filed on April 20, 2009. In the fore mentioned amendment, the Applicants argued, *"Applicants note again, for the third consecutive Office Action response, that the Kleiman '591 reference expressly and clearly teaches opposite to (and thus away from) claim 28's limitations requiring that the second volume group have the same logical configuration as the first volume group (including all the particulars specified in claim 28, e.g., identical volume layout, identical file system structure, etc.)"* (pg.18).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas Duong whose telephone number is 571/272-3911. The examiner can normally be reached on M-F 7:30AM - 4:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivek Srivastava can be reached on 571/272-7304. The fax phone numbers for the organization where this application or proceeding is assigned are 571/273-8300 for regular communications and 571/273-8300 for After Final communications.

/Thomas Duong/

Patent Examiner, Art Unit 2445

July 24, 2009

/VIVEK SRIVASTAVA/
Supervisory Patent Examiner, Art Unit 2445